Faculty of Science

Diploma Policy (Policy on the conferring of degrees)

Persons who have earned the prescribed credits for graduation in the Faculty's curriculum will be judged as having acquired the following knowledge, education, and capabilities, and will be granted a Bachelor's degree (Science).

1. Judgment and practical ability as an independent citizen of sound sense
(1) Have acquired wide-ranging education in the fundamentals of science
(2) Have acquired a sense of ethics concerning the application of science

2. International sensibilities and communication capabilities
(1) Have acquired profound ability to understand tradition, society, and culture
(2) Have acquired communication capabilities making use of expression other than language

3. Expert knowledge and skills to address the issues of the age and the demands of society
(1) Have acquired expert knowledge that forms the foundation for sustainably enabling understanding of the front lines of academic domains of the Departments of the Faculty of Science
(2) Have acquired capabilities to deal with a knowledge and information society, and continue to grow after graduation to acquire the capabilities to contribute to society as a professional

Curriculum Policy (Policy on organization and implementation of curricula)

In order to develop human resources who will engage in activities as a core part of society, the Faculty organizes curricula under the policies shown below.

1. Organization and implementation of curricula
(1) Through the University-wide common "FYS (First Year Seminar)" in the first semester at University, students acquire the attitude and the study methods of university students, as well as sociality.
(2) Students lean fundamental expert subjects in the second and third academic years, and from the second semester of the third academic year learn in seminars belonging to each laboratory.

2. Educational methods and evaluation
(1) The Faculty conducts quizzes in basic education and languages in class, and evaluates expert education through reports and examinations.
(2) Practical work and exercises are incorporated into all Departments, and are evaluated through reports and presentations.
(3) In the fourth academic year, the Faculty conducts graduation research on specific themes of science in laboratories, and evaluates the research through theses and presentations.
(4) In order to effectuate a credits system, the Faculty sets clear and strict methods and criteria for the evaluation of academic performance.

Admissions Policy

1. The capabilities fostered by a university education
(1) The Faculty of Science develops human resources who have acquired general knowledge and the fundamentals of academic research, who have established themselves in the path of gaining expert knowledge of the sciences, who possess the capability to engage in activity as a core part of society, and who have a desire to continue learning.

2. Entrants sought by the Faculty
(1) Persons who possess basic scholarship in sciences, mathematics, English, etc. at the high school graduation level
(2) Persons who possess a desire to actively study at university
(3) Persons who possess a clear sense of purpose in seeking to make use of their university studies in the future

3. Evaluation of capabilities through high school (selection method)
(1) The basic scholarship necessary for study at the Faculty of Science will be judged on the basis of General Entrance Examinations, the Fellowship for Undergraduate Students Entrance Examination, and Entrance Examinations Using the National Center Test for University Admissions, which test degree of academic achievement in high school.
(2) Recommendation-based entrance examinations consist of AO Entrance Examinations in some Departments, and Designated Partner High School Recommendation Entrance Examinations and Open Recommendation Entrance Examinations in all Departments and in the Integrated Science Program. In Designated Partner High School Recommendation Entrance Examinations, selection will be made on the basis of interviews with persons who possess abundant desire to study and who have received recommendation by the principal of a designated school. In AO Entrance Examinations and Open Recommendation Entrance Examinations, selection will be made on the basis of experiment or observation reports, or essays and interviews, related to the field of expertise of the Department of the Faculty of Science, as well as to science in general.

Faculty of Science, Department of Mathematics and Physics

Diploma Policy (Policy on the conferring of degrees)

Persons who have earned the prescribed credits for graduation in the Department's curriculum will be judged as having acquired the following capabilities and aptitude, and will be granted a Bachelor's degree (Science).

1. Judgment and practical ability as an independent citizen of sound sense
(1) Have acquired a broad perspective on humans, society, and nature, have knowledge of the standard handling of problems concerning mathematics and physics, are able to resolve problems, and have acquired the capabilities to pursue paths that go even further beyond
(2) Have acquired a pluralistic education in mathematics and physics

2. International sensibilities and communication capabilities
(1) Have acquired wide-ranging education, foreign language capabilities, and international sensibilities
(2) Have acquired the capabilities for discovering and resolving the various problems omnipresent in an increasingly internationalized scientific and technological society, from the perspective of mathematics or physics
(3) Have acquired the capability for communication as a fundamental capability for a member of society

3. Expert knowledge and skills to address the issues of the age and the demands of society
(1) Are equipped with the thinking ability and technical ability to resolve the problems of the age using expert knowledge and skills in mathematics and physics

(2) Have acquired the analytical ability, problem resolution ability, and power of expression to meet the demands of society, analyzing the essence of issues and presenting specific solutions in easily understood form

Curriculum Policy (Policy on organization and implementation of curricula)

The Department has established two courses – the Course in Mathematics and the Course in Physics – and has prepared curricula that flexibly meet the diverse aptitudes and interests of students. In both of these, the Department emphasizes both fundamentals and practical application. In order to confer fundamentals that will be applicable throughout life as researchers and engineers who will support the scientific and technological society of the future, the Department organizes curricula under the policies shown below.

1. Organization and implementation of curricula

(1) As education for members of society living in an increasingly international modern era, and for the acquisition of communication capabilities and the ability to understand humans and society, the Department offers humanities- and society-related general education subjects, foreign language subjects, "FYS (First Year Seminar)," subjects on career design, etc.

(2) For the acquisition of a pluralistic perspective on mathematics and physics, the Department organizes introductory subjects in fields of mathematics and sciences to instill the fundamentals of science, as well as a curriculum that enables the elective study of subjects in other Faculties and Departments.

(3) The Course in Mathematics offers the fundamental subjects "Algebra," "Geometry," "Analysis," and "Probability and Statistics" in lower grades, and exercise subjects by which students master the topics learned in those lectures. In higher grades, the Course offers diverse expert subjects in pure mathematics to further deepen understanding based on the fundamentals and to spark an academically inquiring mind, and also does so in applied mathematics to resolve specific problems in real society

(4) In the Course in Physics, students study "Dynamics," "Electromagnetism," "Quantum Mechanics," and "Statistical Mechanics" with integration from fundamentals to advanced content, as well as substantial lecture subjects that extend across applications and theories, including "Solid State Physics," "Condensed Matter Physics," "Elementary Particle Physics," and "Astrophysics."

2. Educational methods and evaluation

(1) The Department is committed to small class-based education centered on seminars, and graduation research, and seeks to enhance bi-directional classes with an emphasis on developing not only knowledge of fields of expertise but also communication capabilities.

(2) The Department emphasizes experiment and problem solving for the acquisition of theory through practice, and organizes these for the learning of extensive applications while organically linking these subjects with lecture subjects.

(3) In order to effectuate a credits system, the Department sets clear and strict methods and criteria for the evaluation of academic performance.

Admissions Policy

1. The capabilities fostered by a university education

(1) The Department develops human resources who have acquired the fundamentals and practical ability in mathematics and physics sought in the researchers and engineers who will lead the new era, as well as the international sensibilities and communication capabilities that form the

foundation for a member of society, and who can resolve the problems of the era and meet the expectations of society.

2. Entrants sought by the Department
(1) Persons who share the educational philosophy of the Department and who possess an inquiring mind and strong interest in mathematics or in physics
(2) Persons who possess basic scholarship in mathematics, sciences, English, etc. up through high school graduation, and who possess a strong desire to study and a clear sense of purpose with regard to independent and active learning in new fields of study
(3) Persons who can engage in tenacious consideration of varied problems, who can generate ideas not bound by existing boundaries, and who can study steadily and continuously

3. Evaluation of capabilities through high school (selection method)
(1) The Department will conduct selection of entrants on the basis of depth of interest in mathematics and physics, strength of clear sense of purpose and desire with regard to learning after admission into the Department, and evaluation of creativity unbound by existing boundaries, by preparing a diverse entrance examination system while emphasizing basic scholarship in mathematics, sciences, English, etc. learned up through high school graduation.

Faculty of Science, Department of Information Sciences

Diploma Policy (Policy on the conferring of degrees)

Persons who have earned the prescribed credits for graduation in the Department's curriculum will be judged as having acquired the following education, knowledge, and capabilities, and will be granted a Bachelor's degree (Science).

1. Judgment and practical ability as an independent citizen of sound sense
(1) Have acquired a wide-ranging perspective on humans, society, and nature
(2) Cultivate a pluralistic education and a firm sense of ethics with regard to information

2. International sensibilities and communication capabilities
(1) Have acquired a wide-ranging education and foreign language capabilities, and have cultivated international sensibilities
(2) Have acquired the capability for communication as a fundamental capability for a member of society

3. Expert knowledge and skills to address the issues of the age and the demands of society
(1) Have acquired the capabilities for discovering the various problems omnipresent in a knowledge and information society, from the perspective of information sciences
(2) Have acquired the logical thinking ability to analyze and integrate discovered problems, and the capabilities to organize and express the nature of problems
(3) Have cultivated the capabilities to design and achieve specific solutions to the various problems omnipresent in a knowledge and information society

Curriculum Policy (Policy on organization and implementation of curricula)

The Department has prepared curricula that flexibly meet the diverse aptitudes and interests of students. The Department emphasizes both fundamentals and practical application. In order to confer fundamentals that will be applicable throughout life as researchers and engineers who will

support the knowledge and information society of the future, the Department organizes curricula under the policies shown below.

1. Organization and implementation of curricula
(1) For the acquisition of communication capabilities and the ability to understand humans and society as part of education for members of society, the Department offers general education subjects including humanities- and society-related subjects, foreign language subjects, "FYS (First Year Seminar)," and subjects on career design.
(2) The Department offers subjects that form the foundation for information sciences as required subjects in lower grades, and organizes these to cultivate expert knowledge appropriate to the times, following the solid acquisition of education in information sciences.
(3) For the assurance of a foundation in science and the acquisition of a pluralistic perspective on information, the Department allows subjects in other Faculties and Departments to be taken as elective subjects.
(4) The Department systematically offers elective expert education subjects to enable broad study in information sciences, from fundamental theory to advanced application.

2. Educational methods and evaluation
(1) Through the enhancement of exercise and laboratory subjects, and through information seminars and graduation research, the Department achieves close and bi-directional education under a small class-based system and nurtures thinking habits grounded in theory and principles.
(2) In order to effectuate a credits system, the Department sets clear and strict methods and criteria for the evaluation of academic performance.

Admissions Policy
1. The capabilities fostered by a university education
(1) The Department develops human resources who have acquired the solid fundamentals and flexible practical ability in information sciences that are sought in the information engineers who will lead the modern knowledge and information society.

2. Entrants sought by the Department
(1) Persons who possess basic scholarship in mathematics, English, Japanese, etc. at the high school graduation level, and who possess a desire to study and a clear sense of purpose with regard to independent and active learning in new fields of study
(2) Persons who possess a desire to study and a sense of purpose with regard to learning information sciences at the expert level and to putting the acquired ideas and knowledge to use in society
(3) Persons who possess an inquiring mind and a strong interest in information sciences, and who possess a desire to research these in depth

3. Evaluation of capabilities through high school (selection method)
(1) By conducting diverse entrance examinations, the Department accepts students who have acquired the logical thinking ability and basic scholarship necessary for university learning through study at high school, and who possess a strong desire to study and an interest in information sciences.

Faculty of Science, Department of Chemistry

Diploma Policy (Policy on the conferring of degrees)

Persons who have earned the prescribed credits for graduation in the Department's curriculum will be judged as having acquired the following knowledge, education, and capabilities, and will be granted a Bachelor's degree (Science).

1. Judgment and practical ability as an independent citizen of sound sense

(1) Possess a sense of ethics and materiality grounded in a scientific perspective, and have acquired the capabilities to propose responsible guidelines for social activity.

2. International sensibilities and communication capabilities

(1) Have acquired the language ability to demonstrate one's own thinking and convey it through apt expression, as well as the communication capabilities to accurately understand the assertions of others

3. Expert knowledge and skills to address the issues of the age and the demands of society

(1) Have acquired a wide-ranging education concerning tradition, society, and culture, and fundamental knowledge of material science

(2) Understand concepts and methods for handling and creating new substances

Curriculum Policy (Policy on organization and implementation of curricula)

In order to develop human resources who have acquired a wide-ranging education, communication capabilities, information processing capabilities, and knowledge and skills in material science spanning the basics of science to advanced chemistry, and who accordingly are able to engage in activity as a core part of society, the Department organizes curricula under the policies shown below.

1. Organization and implementation of curricula

(1) The Department offers Course subjects composed of basic chemistry, laboratory methods of chemistry, methods of expression, research methods, and other key subjects as required subjects (Cluster A), and elective subjects composed of expert subjects in specific fields of chemistry (Physical Chemistry, Analytical Chemistry, Inorganic Chemistry, Organic Chemistry) and Environmental Chemistry and other advanced applications as chemistry-related subjects (Cluster B). The Department also offers fundamental subjects in science other than chemistry as related subjects (Cluster C).

(2) In the first academic year, students simultaneously study Faculty-wide common fundamental subjects and Course subjects in chemistry. In fundamental subjects, students learn the attitude of university students through the "FYS (First Year Seminar)," and acquire communication capabilities and the language ability necessary for Course subjects through foreign language subjects (English). Students also acquire education concerning tradition, society, and culture through elective fundamental subjects. Elective fundamental subjects are also offered in the second academic year onward.

(3) In its first-year Course subjects, the Department offers "Basic Sciences (Chemistry)" as a bridge from the fundamentals of chemistry learned in high school, and "Introduction to Chemistry I," "Introduction to Chemistry Ⅱ," and "Basic Physical Chemistry I" as foundations for fields of university chemistry.

(4) As laboratory methods for the acquisition of experimental observation skills for the handling of substances and capabilities for accurately processing the data obtained, the Department offers "Basic Chemistry I and II," "Basic Chemistry Experiments," and "Experiments in Materials

Chemistry I and II" from the first to third academic years.
(5) As methods of expression and English education for reading and writing chemistry literature and dealing with chemistry information, the Department offers "Reading in Chemistry I, II, and III" in the second and third academic years.
(6) In order to integrate the expert education in chemistry, experimentation methods, and methods of expression acquired from the first to third academic years, and as research methods for the acquisition of chemistry methodologies and the capability for the hands-on practice of research activities that are the manifestation of methodologies, the Department offers "Practice in Chemistry I and II" in the third academic year and "Graduation Thesis I and II" and "Seminar I and II" in the fourth academic year.

2. Educational methods and evaluation
(1) The Department practices educational methods by which students acquire the capabilities to learn on their own and resolve problems, not only through lectures but also through exercise and laboratory subjects, and progress throughout the academic years.
(2) In fourth-year graduation research and seminar, the Department practices an educational method by which students acquire capabilities for pursuing research by undertaking research themes on unsolved issues, as a compilation of the four years.
(3) Whether students have acquired basic scholarship is evaluated on the basis of end-of-semester examinations, etc. in lower grades, and whether students have acquired the methodologies and concepts of material science is evaluated through reports and presentations in higher grades. Particularly in the writing of graduation theses and in graduation thesis presentations, expert academic staff members offer guidance to ensure that the capabilities for these are exercised.
(4) In order to effectuate a credits system, the Department sets clear and strict methods and criteria for the evaluation of academic performance.

Admissions Policy
1. The capabilities fostered by a university education
(1) The Department develops human resources who have acquired a wide-ranging education and communication/information processing capabilities, who have acquired the basics of science as well as knowledge and skills in material science, and who, through these, will engage in activity as a core part of society.

2. Entrants sought by the Department
(1) Persons who possess basic scholarship in sciences, mathematics, English, etc. at the high school graduation level
(2) Persons who possess an inquiring mind and an interest in chemistry
(3) Persons who possess a desire to study and a sense of purpose with regard to learning chemistry at the expert level and to making the acquired abilities of service of society
(4) Persons who prefer understanding over memorizing formulas or knowledge
(5) Persons who enjoy experimentation and observation and who like to make things

3. Evaluation of capabilities through high school (selection method)
(1) By conducting diverse entrance examinations, the Department accepts students who possess the fundamental ability to study chemistry at university, who enjoy studying chemistry, and who can make use of that knowledge and experience in the future to contribute to society.

Faculty of Science, Department of Biological Sciences

Diploma Policy (Policy on the conferring of degrees)

Those who have earned credits sufficient for graduation in the Department's curriculum will be judged as having acquired the following knowledge, education, and capabilities, and will be granted a Bachelor's degree (Science).

1. Judgment and practical ability as an independent citizen of sound sense
(1) Have acquired reasoning ability grounded in natural science
(2) Have acquired a sense of ethics and problem-solving ability grounded in biological expertise

2. International sensibilities and communication capabilities
(1) Have acquired basics as a member of society through the general education classes
(2) Have acquired communicative competence backed by the command of languages through the language and discussion classes

3. Expert knowledge and skills to address the issues of the age and the demands of society
(1) Have acquired capability to propose fair and reliable solutions to problems of modern society
(2) Have acquired biology-based reasoning ability that will serve to settle and/or innovate on present day issues

Curriculum Policy (Policy on organization and implementation of curricula)

1. Organization and implementation of curricula

The Department organizes curricula under the policies listed below, to develop personnel who have acquired expertise and reasoning ability based on biology, and will be actively involved in biology-related diverse fields in society.

(1) To acquire basic academic skills including a good education, the Department offers, as a liberal arts course, the University-wide subject, "FYS (First Year Seminar)," as well as general education subjects and foreign languages classes.
(2) To understand the unitary and diverse aspects of living organisms, and to inquire deeply into biological events, the Department offers lecture subjects specialized in various levels of biological hierarchy, ranging from molecules to the global ecosystem.
(3) As first-year Course subjects, the Department offers introduction subjects to complement high-school level knowledge on science of the students.
(4) The Department offers laboratories in the first and the third academic years, to develop the abilities to analyze and evaluate experimental data and to appropriately report the results, applying the knowledge and the reasoning learned in lectures.
(5) The Department offers discussion classes in the second and the third academic years to develop the ability to read and comprehend papers and textbooks on biology and to express their well-organized opinions.
(6) In the fourth academic year, the Department assigns the graduation thesis and a seminar on advanced biological literatures. These two will complete the four-year study of the students.

2. Educational methods and evaluation
(1) The Department organizes curricula that offer a right combination of lectures, discussions, and laboratories, to make them effective in concert with each other.
(2) The Department offers small and interactive classes, such as "FYS" in the first year and other discussion classes in the following years. These classes allow the students to prepare, present, and discuss by themselves, which enable them to address unsolved problems with proficient communication skills.

(3) For proper approval of credits, the Department defines methods and criteria for the evaluation of academic performance.

Admissions Policy

1. The capabilities fostered by a university education

(1) The Department develops human resources who have acquired expertise and reasoning ability based on biology, and who will be actively involved in biology-related diverse fields in society.

2. Entrants sought by the Department

(1) Those who have gained a high-school level education in science, mathematics, English, etc.

(2) Those who demonstrate intellectual curiosity and express a strong interest in unitary and diverse aspects of living organisms, as well as diverse biological events.

(3) Those who aspire to be actively involved in such fields as research, education, and development with special expertise in biology.

3. Evaluation of capabilities through high school (selection method)

(1) By conducting diverse entrance examinations, the Department selects students who possess the education required for university studies, and who wish to become qualified citizens with biological background.

Faculty of Science, Integrated Science Program

Diploma Policy (Policy on the conferring of degrees)

Persons who have earned the prescribed credits for graduation in the Program's curriculum will be judged as having acquired the following knowledge, education, and capabilities, and will be granted a Bachelor's degree (Science) from the Department to which the students belong. The diploma certifies that the student has completed the course of the Integrated Science Program, indicating the study of wide-ranging fields of science under the Program's unique curricula.

1. Judgment and practical ability as an independent citizen of sound sense

(1) Possess a sound sense of ethics that reveres nature, and have acquired the capabilities to responsibly propose and execute guidelines for social activity

2. International sensibilities and communication capabilities

(1) Have acquired communication capabilities grounded in the wide-ranging education and language ability that are vital to culture and international understanding

3. Expert knowledge and skills to address the issues of the age and the demands of society

(1) Have acquired the capabilities to organize and understand the information flooding society, based on an understanding of the fundamentals of natural science

(2) Have acquired the capabilities to examine, explain, and communicate information as a science and technology coordinator

(3) Have further grown since graduation, and have acquired the capability to contribute to society as a professional

Curriculum Policy (Policy on organization and implementation of curricula)

In order to cultivate human resources who love nature, who acquire a broad education grounded in an understanding of fundamental knowledge of science, and who can contribute to society with a sound sense of ethics, the Program organizes curricula under the policies shown below.

1. Organization and implementation of curricula

(1) Through the "FYS (First Year Seminar)" in the first semester of the first academic year, the Program instills the attitude and study methods of university students. The Program also instills understanding of the fundamentals of natural science through the study of the history of the development of various fields of science. In the second semester of the first academic year, the Program conducts education in a fundamentals of science exercise format, using simple English texts as educational materials.

(2) In the second academic year, the Program sets required subjects for nurturing communication ability grounded in the fundamentals of science and for learning the nature of science, and also offers subjects for studying the intersection of science and society through specific approaches. Through the fourth semester, in addition to wide-ranging general education subjects, the Program has students learn the fundamentals of contemporary science and technology through the study of elective and required subjects, divided among laboratory and practice subjects, nature and information subjects, mathematics and physics subjects, and chemistry and biology subjects.

(3) From the fifth semester in the third academic year, students will belong to the Department of Mathematics and Physics, Department of Information Sciences, Department of Chemistry, or Department of Biological Sciences, and will acquire expert knowledge and skills through Course subjects that include exercises and laboratory subjects.

(4) In the seventh and eighth semesters in the fourth academic year, students conduct graduation research (integrated science research) on specific topics in the laboratory to which they belong. In this process, the Program nurtures capabilities for problem discovery and resolution, as well as communication capabilities through opportunities to present research results (research paper writing and presentations).

2. Educational methods and evaluation

(1) The Program practices education methods that include not only lessons in lecture format, but also formats in which students independently engage in learning through exercise and laboratory subjects.

(2) From the sixth semester, students belong to the laboratory of their Department, where they further deepen expertise through small class-based education and, at times, one-on-one instruction by academic staff.

(3) In graduation research (integrated science research) in the seventh and eighth semesters, the Program nurtures the ability to address unsolved problems by setting and engaging in new themes following investigative analysis of preceding research and discussion with academic staff.

(4) In order to effectuate a credits system, the Program sets clear and strict methods and criteria for the evaluation of academic performance.

(5) Evaluation methods are communicated in advance to students through clear description in the syllabus of each subject. In particular, academic staff members carefully evaluate the reports that are the result of students' independent activities in exercises and laboratory subjects. In laboratory activities (seminars, seminars (journal clubs), and graduation research), expert academic staff members conduct attentive instruction and evaluation from both an academic perspective and educational perspective.

Admissions Policy

1. The capabilities fostered by a university education

(1) The Program develops human resources who, with an integrated understanding of the fundamentals of natural science, can engage in activity as a core part of society.

2. Entrants sought by the Program

(1) Persons who possess the basic scholarship in the sciences, mathematics, Japanese, English, etc. that is necessary to understand the basic principles of natural science, at the high school graduation level

(2) Persons who possess a desire to acquire the education necessary for a modern member of society, the capability to understand various opinions from differing standpoints, and the ability to express their own opinion

(3) Persons who possess the interest and desire to study broad domains that combine mathematics, mathematical sciences, physics, information science, chemistry, biological science, etc.

3. Evaluation of capabilities through high school (selection method)

(1) By conducting diverse entrance examinations, the Department accepts students who have acquired the basic scholarship necessary for university learning through study at high school, and who can develop scientific thinking and methods through integrated study of natural science at university.